2314-227 JLI:ch

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re p	atent application of:	)
Baldoı	mero M. OLIVERA	)
Serial	No.: (to be assigned)	)
Filed:	28 December 2000	)
For:	O-SUPERFAMILY CONOTOXIN PEPTIDES	)

## STATEMENT PURSUANT TO 37 CFR 1.821(f)

Assistant Commissioner for Patents Washington, D.C. 20231

Sir:

In the matter of the above-identified application, which is filed concurrently herewith, Applicants submit a computer diskette containing the Sequence Listing of the instant application. It is hereby certified that the paper and computer copies of these sequences are identical.

Respectfully submitted,

Jeffrey L. Ihnen

Registration No. 28,957

ROTHWELL, FIGG, ERNST & MANBECK, P.C.

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Washington, D.C. 20004

(202) 783-6040

2314\\227a sq1

gtgatgtctt ctctccctc

## SEQUENCE LISTING

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## yr or O-phospho-Tyr

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Lys Leu Asn Lys Arg Cys Arg Leu Gly Ala Glu Ser Cys Asp Val Ile

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acc tgo Thr Cy: 65	c tgc s Cys	ggc Gly	tat Tyr	tgc Cys 70	gtt Val	ctt Leu	ctt Leu	gtc Val	tgc Cys 75	cta Leu	taaa	acta	ccg		238
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Asn Lys 50	arg Arg	Cys	Leu	Glu	Phe 55	Gly	Glu	Leu	Cys	Asn 60	Phe	Phe	Phe	Pro	
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                                25
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192

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20 25 30

144

240

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Asn Lys Arg Cys Lys Ala Glu Ser Glu Ala Cys Asn Ile Ile Thr Gln
50 60

aac tgc tgc gac ggc aag tgc ctt ttt ttc tgc ata caa att cca gag Asn Cys Cys Asp Gly Lys Cys Leu Phe Phe Cys Ile Gln Ile Pro Glu 65 70 75

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Phe Ser Lys Ala His His Glu Met Lys Asn Pro Lys Ala Ser Lys Leu

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tg <u>c</u> Trp	aca Thr	ttc Phe	gtc Val 20	acg Thr	gct Ala	gtg Val	cct Pro	cac His 25	tcc Ser	agc Ser	gat Asp	gca Ala	ttg Leu 30	gag Glu	aat Asn	96
ctt Leu	tat Tyr	ctg Leu 35	aag Lys	gca Ala	ctt Leu	cac His	gaa Glu 40	acg Thr	gaa Glu	aac Asr	cac His	gaa Glu 45	gcc Ala	tct Ser	aaa Lys	144
ttg Leu	aac Asn 50	gtg Val	aga Arg	gac Asp	gac Asp	gag Glu 55	tgc Cys	gaa Glu	cct Pro	cct Pro	gga Gly 60	gat Asp	ttt Phe	tgt Cys	ggc Gly	192
ttt Phe 65	ttt Phe	aaa Lys	att Ile	ggg Gly	ccg Pro 70	cct Pro	tgc Cys	tgc Cys	agt Ser	ggc Gly 75	tgg Trp	tgc Cys	ttc Phe	ctc Leu	tgg Trp 80	240
	gca Ala	taa	aacto	gcc (	gtgat	igtet	it c	tcct	ccct	tc						277
<21 <21 <21 <21	1> :	128 82 PRT Conus	s sti	ciatu	ıs											
<40	0> :	128														
Met 1	Lys	Leu	Thr	Cys 5	Val	Met	Ile	Val	Ala 10	Val	Leu	Phe	Leu	Thr 15	Ala	
Trp	Thr	Phe	Val 20	Thr	Ala	Val	Pro	His 25	Ser	Ser	Asp	Ala	Leu 30	Glu	Asn	
Leu	Tyr		Lys							Asn		Glu 45	Ala	Ser	Lys	
Leu	Asn 50	Val	Arg	Asp	Asp	Glu 55	Cys	Glu	Pro	Pro	Gly 60	Asp	Phe	Cys	Gly	
Phe 65	Phe	Lys	Ile	Gly	Pro 70	Pro	Cys	Cys	Ser	Gly 75	Trp	Cys	Phe	Leu	Trp 80	

Cys Ala

<210> 129 <211> 30 <212> PRT <213> Conus striatus

<220> <221> SITE

<222> (1)..(30)<223> Xaa at residues 3 and 5 may be Glu or gamma-carboxy-Glu; Xaa at r esidues 6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residue s 24 and 28 may be Trp or bromo-Trp <400> 129 Asp Asp Xaa Cys Xaa Xaa Xaa Gly Asp Phe Cys Gly Phe Phe Lys Ile Gly Xaa Xaa Cys Cys Ser Gly Xaa Cys Phe Leu Xaa Cys Ala <210> 130 <211> 277 <212> DNA <213> Conus omaria <220> <221> CDS <222> (1)..(246)<400> 130 atg aaa ctg acg tgc gtg atg atc gtt gct gtg ctg ttc ttg acc gcc 48 Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 10 tgg aca ttc gtc acg gct gtg cct cac tcc agc aat gca ttg gaa aat 96 Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asn Ala Leu Glu Asn 20 25 ctt tat ctg aag gca cgt cac gaa atg gaa aac ccc gaa gcc tct aaa 144 Leu Tyr Leu Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys 35 40 ttg aac acg aga gac gat tgc gaa cct cct gga aat ttt tgt ggc 192 Leu Asn Thr Arg Asp Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly atg ata aaa att ggg ccg cct tgc tgc agt ggc tgg tgc ttt ttc qcc 240 Met Ile Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala tgc gcc taaaactgcc gtgatgtctt ctcctccct c 277 Cys Ala <210> 131 <211> 82 <212> PRT <213> Conus omaria <400> 131 Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 10

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Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asn Ala Leu Glu Asn

Leu Tyr Leu Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys 35 40 45

Leu Asn Thr Arg Asp Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly 50 55 60

Met Ile Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala 65 70 75 80

Cys Ala

<210> 132 <211> 30

<212> PRT

<213> Conus omaria

<220>

<221> SITE

<222> (1)..(30)

<223> Xaa at residue 5 may be Glu or gamma-carboxy-Glu; Xaa at residues 6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residue 24 may be Trp or bromo-Trp

<400> 132

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Gly Xaa Xaa Cys Cys Ser Gly Xaa Cys Phe Phe Ala Cys Ala 20 25 30

<210> 133 <211> 277

<212> DNA

<213> Conus aulicus

<220>

<221> CDS

<222> (1)..(246)

<400> 133

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1 5 10 15

tgg aca ttc gtc acg gct gtg cct cac tcc agc aat gca ttg gag aat 96
Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asn Ala Leu Glu Asn
20 25 30

ctt tat ctg aag gca cgt cac gaa atg gaa aac ccc gaa gcc tct aaa 144 Leu Tyr Leu Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys

ttg aac acg aga gac tac gat tgc gaa cct cct gga aat ttt tgt ggc 192 Leu Asn Thr Arg Asp Tyr Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly 50 60

atg ata aaa att ggg ccg cct tgc tgc agt ggc tgg tgc ttt ttc gcc $_{\odot}$  240

<210>

<211> 685 <212> DNA

136

Met Ile Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala 75 tgc gcc taaaactgcc gtgatgtctt ctcctcccct c 277 Cys Ala <210> 134 <211> 82 <212> PRT <213> Conus aulicus <400> 134 Met Lys Leu Thr Cys Leu Met Ile Val Ala Val Leu Phe Leu Thr Ala Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asn Ala Leu Glu Asn Leu Tyr Leu Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys Leu Asn Thr Arg Asp Tyr Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly 50 55 Met Ile Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala Cys Ala <210> 135 <211> 30 <212> PRT <213> Conus aulicus <220> <221> SITE <222> (1)..(30)Xaa at residue 2 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Ty r, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 5 may be Glu or gamma-carboxy-Glu; Xaa at residues 6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residue 24 may be Trp or bromo-Trp <400> 135 Asp Xaa Asp Cys Xaa Xaa Xaa Gly Asn Phe Cys Gly Met Ile Lys Ile Gly Xaa Xaa Cys Cys Ser Gly Xaa Cys Phe Phe Ala Cys Ala

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caaactgtaa taaataatgc aagtctctct ttctgtttgt atctgacaga ttg aac 116 Leu Asn 1
acg aga gac gac gat tgc gaa cct cct gga aat ttt tgt ggc atg ata Thr Arg Asp Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly Met Ile 5 10 15
aaa att ggg ccg cct tgc tgc agt ggc tgg tgc ttt ttc gcc tgc gcc Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala Cys Ala 20 25 30
taaaactgcc gtgatgtctt ctcttcccct ctagtagtag taggcggccg ctctagagga 272
tccaagctta cgtacgcgtg catgcgacgt catagctctt ctatagtgtc acctaaattc 332
aattcactgg ccgtcgtttt acaacgtcgt gactgggaaa accctggcgt tacccaactt 392
aategeettg cagcacatee eeetttegee agetggegta atagegaaga ggeeegeace 452
gategeeett eecaacagtt gegeageetg aatggegaat gggaegegee etgtagegge 512
gcattaagcg cggcgggtgt ggtggttacg ccgcagccgt gacccgctac acttgccagc 572
gccctagcgc ccgctccttt cgctttcttc cttcctttct cgccacgttc gccggctttt 632
cccgtcaage tetaaategg gggeteettt agggteegat ttaagtgett tac 685
<210> 137 <211> 34 <212> PRT <213> Conus marmoreus
<400> 137
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Met Ile Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala 20 25 30
Cys Ala
<210> 138 <211> 30 <212> PRT <213> Conus marmoreus

<220> <221> SITE

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<222>
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<223>
       Xaa at residue 5 may be Glu or gamma-carboxy-Glu; Xaa at residues
        6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residue 24 may
        be Trp or bromo-Trp
<400> 138
Asp Asp Cys Xaa Xaa Xaa Gly Asn Phe Cys Gly Met Ile Lys Ile
Gly Xaa Xaa Cys Cys Ser Gly Xaa Cys Phe Phe Ala Cys Ala
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      139
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      126
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<213>
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<220>
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       CDS
<222>
      (1)..(96)
<400> 139
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                5
ata ctt gga cca ctg tgc tgc agt ggc tgg tgc tta tac gtc tgc atg
                                                                       96
Ile Leu Gly Pro Leu Cys Cys Ser Gly Trp Cys Leu Tyr Val Cys Met
            20
taaaactgcc gtgatgtctt ctatcccctc
                                                                      126
<210>
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<211>
       32
<212>
      PRT
<213>
      Conus regius
<400> 140
Leu Asn Gln Arg Asp Cys Leu Ser Lys Asn Ala Phe Cys Ala Trp Pro
                5
                                    10
                                                         15
Ile Leu Gly Pro Leu Cys Cys Ser Gly Trp Cys Leu Tyr Val Cys Met
                                25
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<210>
       141
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       28
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      PRT
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<220>
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<222>
      Xaa at residues 11 and 22 may be Trp or bromo-Trp; Xaa at residue
       s 12 and 16 may be Pro or hydroxy-Pro; Xaa at residue 25 may be T
       yr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phos
       pho-Tyr
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<400> 144

<400> 141 Asp Cys Leu Ser Lys Asn Ala Phe Cys Ala Xaa Xaa Ile Leu Gly Xaa Leu Cys Cys Ser Gly Xaa Cys Leu Xaa Val Cys Met <210> 142 <211> 133 <212> DNA <213> Conus radiatus <220> <221> CDS <222> (2)..(103) <400> 142 a ttg aac aag aaa ggt gat gac tgc ctt gct gtt aaa aaa aat tgt ggc 49 Leu Asn Lys Lys Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly ttt cca aaa ctt gga ggg cca tgc tgc agt ggc ttg tgc ttt ttc gtc 97 Phe Pro Lys Leu Gly Gly Pro Cys Cys Ser Gly Leu Cys Phe Phe Val 133 tgc gcc taaaactgcc gtgatgtctt ctcctccct Cys Ala <210> 143 <211> 34 <212> PRT <213> Conus radiatus <400> 143 Leu Asn Lys Lys Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly Phe Pro Lys Leu Gly Gly Pro Cys Cys Ser Gly Leu Cys Phe Phe Val 25 Cys Ala <210> 144 <211> 30 <212> PRT <213> Conus radiatus <220> <221> SITE (1)..(30)Xaa at residues 14 and 19 may be Pro or hydroxy-Pro.

Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly Phe Xaa Lys Leu

10 15 Gly Gly Xaa Cys Cys Ser Gly Leu Cys Phe Phe Val Cys Ala 25 <210> 145 <211> 127 <212> DNA <213> Conus regius <220> <221> CDS <222> (1)..(96) <400> 145 ttg aat cag agc gac tgc ctt cct aga gac aca ttc tgt gcc ttg ccg 48 Leu Asn Gln Ser Asp Cys Leu Pro Arg Asp Thr Phe Cys Ala Leu Pro 10 caa ctt gga cta ctg tgc tgc agt ggc cgg tgc tta ctc ttc tgc gtg 96 Gln Leu Gly Leu Leu Cys Cys Ser Gly Arg Cys Leu Leu Phe Cys Val taaaactgcc gtgatgtctt ctcctccct c 127 <210> 146 <211> 32 <212> PRT <213> Conus regius <400> 146 Leu Asn Gln Ser Asp Cys Leu Pro Arg Asp Thr Phe Cys Ala Leu Pro Gln Leu Gly Leu Leu Cys Cys Ser Gly Arg Cys Leu Leu Phe Cys Val <210> 147 <211> 28 <212> PRT <213> Conus regius <220> <221> SITE <222> (1)..(28)<223> Xaa at residues 4 and 12 may be Pro or hydroxy-Pro. <400> 147 Asp Cys Leu Xaa Arg Asp Thr Phe Cys Ala Leu Xaa Gln Leu Gly Leu 10 Leu Cys Cys Ser Gly Arg Cys Leu Leu Phe Cys Val 20 <210> 148 <211> 345 <212> DNA <213> Conus aurisiacus

<220> <221> CDS <222> (1)(234)	
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ttt ccg aag gca cgt cat gaa atg aag aac ccc gaa gcc tct aaa ttg Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	144
aac aag aga gat ggg tgc tct aat gct ggt gca ttt tgt ggc atc cat Asn Lys Arg Asp Gly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His 50 55 60	192
cca gga ctc tgc tgc agc gag att tgc att gtt tgg tgc aca Pro Gly Leu Cys Cys Ser Glu Ile Cys Ile Val Trp Cys Thr 65 70 75	234
tgagtcgtat tctgctggta cattttgtgg cttcaacgga ggactctgct gcagcaacct	294
ttgcttattt ttcgtgtgct taacatattc gtgatgtctt ctactcccat c	345
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Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	
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<pre>&lt;221&gt; SITE &lt;222&gt; (1)(27) &lt;223&gt; Xaa at residue 14 may be Pro or hydroxy-Pro; Xaa at residue 20 m    y be Glu or gamma-carboxy-Glu; Xaa at residue 25 may be Trp or h    omo-Trp</pre>													
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Asp Gly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His Xaa Gly Leu 1 5 10 15													
Cys Cys Ser Xaa Ile Cys Ile Val Xaa Cys Thr 20 25													
<210> 151 <211> 412 <212> DNA <213> Conus purpurascens													
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tgg aca ttc gtc acg gct gat gac tcc aaa aat gga ctg gag aat cat Trp Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His 20 25 30	96												
ttt tgg aag gca cgt gac gaa atg aag aac cgc gaa gcc tct aaa ttg Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu 35 40 45	4												
gac aaa aag gaa gcc tgc tat gcg cct ggt act ttt tgt ggc ata aag Asp Lys Lys Glu Ala Cys Tyr Ala Pro Gly Thr Phe Cys Gly Ile Lys 50 55 60	<del>)</del> 2												
ccc ggg cta tgc tgc agt gag ttt tgt ctc ccg ggc gtc tgc ttc ggt Pro Gly Leu Cys Cys Ser Glu Phe Cys Leu Pro Gly Val Cys Phe Gly 70 75 80	ł O												
ggt taactgccgt gatgtcttct actcccctct gtgctacctg gcttgatctt Gly													
tgatcggcgt gtgcccttca ctggttatga acccactgat cttacctctc ttgaaggacc 35	53												
tctggggtcc agcatccaaa taagcgacat cccaatgaaa aaaaaaaaa aaaaaaaaa													
<210> 152 <211> 81 <212> PRT <213> Conus purpurascens													
<400> 152													
Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 1 5 10 15													

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Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu 35 40 45

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Gly

<210> 153

<211> 29

<212> PRT

<213> Conus purpurascens

<220>

<221> SITE

<222> (1)..(29)

<223> Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or O-phospho-Tyr; Xaa at residues 6, 14 and 24 may be Pr o or hydroxy-Pro

<400> 153

Xaa Ala Cys Xaa Ala Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Cys Cys Ser Xaa Phe Cys Leu Xaa Gly Val Cys Phe Gly

<210> 154

<211> 29

<212> PRT

<213> Conus purpurascens

<220>

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<223> Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or O-phospho-Tyr; Xaa at residues 6, 14 and 24 may be Pr o or hydroxy-Pro

<400> 154

Xaa Ala Cys Xaa Ala Xaa Gly Thr Ala Cys Gly Ile Lys Xaa Gly Leu 1 5 10 15

Cys Cys Ser Xaa Phe Cys Leu Xaa Gly Val Cys Phe Gly 20 25

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<210>
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       (1)..(29)
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       Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at
       residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su
       lpho-Tyr or O-phospho-Tyr; Xaa at residues 6, 14 and 24 may be Pr
       o or hydroxy-Pro
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Cys Cys Ser Xaa Phe Cys Leu Xaa Gly Val Cys Phe Gly
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       (1)..(29)
       Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at
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       residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su
       lpho-Tyr or O-phospho-Tyr; Xaa at residues 6, 14 and 24 may be Pr
       o or hydroxy-Pro
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Xaa Ala Cys Xaa Ala Xaa Gly Ala Phe Cys Gly Ile Lys Xaa Gly Leu
Cys Cys Ser Xaa Phe Cys Leu Xaa Gly Val Cys Phe Gly
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<213>
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<220>
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       CDS
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tgg aca ttc gtc acg gct gat gac tcc aga tat gga ttg aag aat ctt
                                                                       96
Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu
ttt ccg aag gca cgt cat gaa atg aag aac cct gaa gcc tct aaa ttg
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Phe	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
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	gga Gly															240
	gat Asp			taacagtgtg cgttggttag tgtc.tctcc teecete										289		

<210> 158

<211> 84

<212> PRT

<213> Conus magus

<400> 158

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Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40

Asn Lys Arg Asp Gly Cys Tyr Asn Ala Gly Thr Phe Cys Gly Ile Arg

Pro Gly Leu Cys Cys Ser Glu Phe Cys Phe Leu Trp Cys Ile Thr Phe

Val Asp Ser Gly

<210> 159

<211> 32

<212> PRT

<213> Conus magus

<220>

<221> SITE

<222> (1)..(32)

<223> Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Ty r, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 14 may be Pro or hydroxy-Pro; Xaa at residue 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 25 may be Trp or bromo-Trp

<400> 159

Asp Gly Cys Xaa Asn Ala Gly Thr Phe Cys Gly Ile Arg Xaa Gly Leu

10 15 Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Val Asp Ser 25 <210> 160 <211> 273 <212> DNA <213> Conus magus <220> <221> CDS <222> (1)..(249) <400> 160 atg aaa ctg acg tgc gtg atg atc gtt gct gtg ctg ttc ttg acc acc 48 Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Thr 10 tgg aca ttc gtc acg gct gat gac tcc aga tat gga ttg aag aat ctt 96 Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu 20 25 ttt ccg aag gca cgt cat gaa atg aag aac cct gaa gcc tct aaa ttg 144 Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 40 aac aag aga gat gaa tgc tat cct cct ggt aca ttt tgt ggc atc aaa 192 Asn Lys Arg Asp Glu Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys cca gga ctt tgc tgc agc gcg ata tgc tta tcg ttt gtc tgc ata tca 240 Pro Gly Leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser 75 273 ttt gat ttt tgattgatgt cttctcctcc cctc Phe Asp Phe <210> 161 <211> 83 <212> PRT <213> Conus magus <400> 161 Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Thr 10 Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 Asn Lys Arg Asp Glu Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys 55 50

Pro Gly Leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser

Phe Asp Phe

<210> 162 <211> 32 <212> PRT

<213> Conus magus

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<221> SITE

<222> (1)..(32)

<223> Xaa at residue 2 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 5, 6and 14 may be Pro or hydro xy-Pro

<400> 162

Asp Xaa Cys Xaa Xaa Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu 1 5 10 15

Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser Phe Asp Phe 20 25 30

<210> 163

<211> 289

<212> DNA

<213> Conus magus

<220>

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<222> (1)..(252)

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1 10 15

tgg aca ttc gtc acg gct gat gac tcc aga tat gga ctg aag gat ctg 96
Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asp Leu
20 25 30

ttt ccg aag gaa cgt cat gaa atg aag aac ccc gaa gcc tct aaa ttg
Phe Pro Lys Glu Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu
35 40

aac cag aga gaa gcc tgc tat aat gct ggt tca ttt tgt ggc atc cat 192 Asn Gln Arg Glu Ala Cys Tyr Asn Ala Gly Ser Phe Cys Gly Ile His

cca gga ctc tgc tgc agc gag ttt tgc att ctt tgg tgc ata aca ttt
Pro Gly Leu Cys Cys Ser Glu Phe Cys Ile Leu Trp Cys Ile Thr Phe
65 70 75 80

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<212>

<213>

<220> <221>

<222>

<400> 166

DNA

CDS

Conus magus

(1)..(249)

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ttt ccg aag gaa cgt cat gaa atg aag aac ccc gaa gcc tct aaa ttg Phe Pro Lys Glu Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	
aac cag aga gaa gcc tgc tat aat gct ggt aca ttt tgt ggc atc aaa 192 Asn Gln Arg Glu Ala Cys Tyr Asn Ala Gly Thr Phe Cys Gly Ile Lys 50 55 60	
cca gga ctt tgc tgc agc gcg ata tgc tta tcg ttt gtc tgc ata tca Pro Gly Leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser 70 75 80	
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Phe Pro Lys Glu Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	
Asn Gln Arg Glu Ala Cys Tyr Asn Ala Gly Thr Phe Cys Gly Ile Lys 50 55 60	
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Phe Asp Leu	
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4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 14 may be Pro or hydroxy-Pro

<400> 168

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<211> 272

<212> DNA

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<220>

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Trp Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His
20 25 30

ttt tgg aag gca cgt gac gaa atg aag aac cgc gaa gcc tct aaa ttg 144
Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu
35 40 45

gac aaa aag gaa gcc tgc tat ccg cct ggt act ttt tgt ggc ata aag 192
Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys
50 55 60

ccc ggg cta tgc tgc agt gag ttg tgt tta ccg gcc gtc tgc ggt 240
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<211> 81

<212> PRT

<213> Conus ermineus

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Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu 35 40 45

14.4

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75

80

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272

<210> 173

<211> 81

<212> PRT

<213> Conus purpurascens

<400> 173

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Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys 50 55 60

Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly 65 70 75 80

Gly

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<223> Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or O-phospho-Tyr; Xaa at residues 14 and 24 may be Pro or hydroxy-Pro

<400> 174

Xaa Ala Cys Xaa Xaa Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu 1 5 10 15

Cys Cys Ser Xaa Leu Cys Leu Xaa Ala Val Cys Val Gly
20 25

<210> 175

<211> 266

<212> DNA

<213> Conus striatus

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aac aag aga Asn Lys Arg 50												192
cca gga ctc Pro Gly Leu 65												240
att gat tgat Ile Asp	gtette	teeteee	etc									266
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_	5				10					15		
1	5 Val Thr 20	Ala Asp	Asp	Ser 25	10 Arg	Tyr	Gly	Leu	Lys 30	15 Asn	Leu	
Trp Thr Phe Phe Pro Lys	Val Thr 20 Ala Arg	Ala Asp	Asp Met 40	Ser 25 Lys	10 Arg Asn	Tyr Pro	Gly	Leu Ala 45	Lys 30 Ser	15 Asn Lys	Leu Leu	
Trp Thr Phe Phe Pro Lys 35 Asn Lys Arg	Val Thr 20 Ala Arg Glu Gly	Ala Asp His Glu Cys Se:	Asp  Met 40	Ser 25 Lys Gly	10 Arg Asn Gly	Tyr Pro Thr	Gly Glu Phe 60	Leu Ala 45 Cys	Lys 30 Ser Gly	15 Asn Lys Ile	Leu Leu His	

<210> 177 <211> 31

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<400>	177														
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Cys Cy:	s Ser	Xaa 20	Phe	Суѕ	Phe	Leu	Xaa 25	Суѕ	Ile	Thr	Phe	Ile 30	Asp		
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aac aaq Asn Lys 50															192
cca gga Pro Gly 65															240
att gat Ile Asp	_	tgtct	ttc 1	cct	eccct	c									266
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Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu 20 25 30

Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45

Asn Lys Arg Asp Gly Cys Ser Ser Gly Gly Thr Phe Cys Gly Ile His 50 55

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Ile Asp

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<211> 31

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<213> Conus striatus

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Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Ile Asp 20 25 30

<210> 181

<211> 31

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<213> Conus striolatus

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<400> 181

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Cys Cys Ser Val Arg Cys Phe Ser Leu Phe Cys Ile Ser Phe Xaa 20 25 30

<210> 182

<211> 345

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		aag Lys 35														144
		aga Arg														192
		ctc Leu														234
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ttgc	ctta	ttt t	cgt	gtgct	it aa	acatt	tcgt	gat	gtct	tct	ctat	tcc	cct o			345
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Trp	Thr	Phe	Val 20	Thr	Ala	Asp	Asp	Ser 25	Arg	Asn	Gly	Leu	Lys 30	Asn	Leu	
Phe	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
Asn	Lys 50	Arg	Tyr	Gly	Cys	Ser 55	Asn	Ala	Gly	Ala	Phe 60	Cys	Gly	Ile	His	
Pro 65	Gly	Leu	Cys	Cys	Ser 70	Glu	Leu	Cys	Leu	Val 75	Trp	Cys	Thr			
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Cys Cys Ser Xaa Leu Cys Leu Val Xaa Cys Thr 20 25	
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ttt ccg aag gca cgt cat gaa atg aag aac ccc gaa gcc tct aaa ttg Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	144
aac aag aga tat ggg tgc tct aat gct ggt gca ttt tgt ggc atc cat Asn Lys Arg Tyr Gly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His 50 55 60	192
cca gga ctc tgc tgc agc gag ctt tgc ctg ggt tgg tgc aca Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Gly Trp Cys Thr 65 70 75	234
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ttgettattt tegtgtgett aacatttegt gatgtettet etatteeect e	345
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aac aag aga tat gag tgc tat ct: ctc gta cat ttt tgt ggc atc aac

Asn Lys Arg Tyr Glu Cys Tyr Leu Leu Val His Phe Cys Gly Ile Asn

55

192

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ttt tcg tgatgtette teeteecate Phe Ser	266
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Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu 20 25 30	
Ser Pro Lys Ala Pro His Glu Met Lys Asn Pro Glu Ala Ser Lys Ser 35 40 45	
Asn Lys Arg Tyr Glu Cys Tyr Leu Leu Val His Phe Cys Gly Ile Asn 50 60	
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                                    10
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Met Gly Leu Cys Cys Ser Asp Lys Cys Met Leu Val Cys Leu Pro
                                                                      113
tgatgtcttc tcctccctc
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       e 7 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-T
       yr or O-phospho-Tyr
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aat gtg ttt ctg tgc tgc agt ggc aac tgc ctt ctc atc tg Asn Val Phe Leu Cys Cys Ser Gly Asn Cys Leu Leu Ile Cy 20 25 30	ys Val Pro
tgatgtcttc tactcccctc	116
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Cys Cys Ser Gly Asn Cys Leu Leu Ile Cys Val Xaa 20 25	
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04	
ctt tat ctg aag gca cat cat gaa atg aac aac ccc gaa gac tct gaa Leu Tyr Leu Lys Ala His His Glu Met Asn Asn Pro Glu Asp Ser Glu 35 40 45	144
ttg aac aag agg tgc tat gat ggt ggg aca ggt tgt gac tct gga aac Leu Asn Lys Arg Cys Tyr Asp Gly Gly Thr Gly Cys Asp Ser Gly Asn 50 55 60	192
caa tgc tgc agt ggc tgg tgc att ttc gcc tgc ctc taaaactgtc Gln Cys Cys Ser Gly Trp Cys Ile Phe Ala Cys Leu 65 70 75	238
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Leu Tyr Leu Lys Ala His His Glu Met Asn Asn Pro Glu Asp Ser Glu 35 40 45	
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Gly Xaa Cys Ile Phe Ala Cys Leu 20	

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tgg Trp	aca Thr	ttc Phe	gtc Val 20	acg Thr	gct Ala	gtg Val	cct Pro	cac His 25	tcc Ser	agc Ser	aat Asn	gcg Ala	ttg Leu 30	gag Glu	aat Asn	96
		ctg Leu 35														144
		aag Lys														192
	_	tgc Cys	_			-			-	_		taaa	aacto	gcc		238
gtga	atgto	ctt d	ctct	cccat	c											258
<210 <211 <212 <213	>	201 76 PRT Conus	s dal	Lli												
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Trp	Thr	Phe	Val 20	Thr	Ala	Val	Pro	His 25	Ser	Ser	Asn	Ala	Leu 30	Glu	Asn	
Leu	Tyr	Leu 35	Lys	Ala	His	His	Glu 40	Met	Asn	Asn	Pro	Glu 45	Asp	Ser	Glu	
Leu	Asn 50	Lys	Arg	Cys	Tyr	Asp 55	Gly	Gly	Thr	Gly	Cys 60	Asp	Ser	Gly	Asn	
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Gly Xa	a Cys	Ile 20	Phe	Val	Cys	Leu										
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gtg gad Val Asj 50															1	L92
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gtgatg	tctt (	ctcct	tccc	ct c											2	259
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Trp Th	r Val	Val 20	Thr	Ala	Val	Pro	His 25	Ser	Asn	Lys	Arg	Leu 30	Ala	Asn		

Districtly

Leu Tyr Leu Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Asn 40 Val Asp Lys Arg Cys Phe Glu Ser Trp Val Ala Cys Glu Ser Pro Lys Arg Cys Cys Ser His Val Cys Leu Phe Val Cys Thr 205 <210> <211> 24 <212> PRT Conus pennaceus <220> <221> SITE <222> (1)..(24)Xaa at residues 3 and 9 may be Glu or gamma-carboxy-Glu; Xaa at r <223> esidue 5 may be Trp or bromo-Trp; Xaa at residue 11 may be Pro o r hydroxy-Pro <400> 205 Cys Phe Xaa Ser Xaa Val Ala Cys Xaa Ser Xaa Lys Arg Cys Cys Ser 10 His Val Cys Leu Phe Val Cys Thr 20 <210> 206 <211> 253 <212> DNA <213> Conus distans <220> <221> CDS <222> (1)..(228)<400> 206 atg aaa ctg acg tgt atg ttg atc atc gct gtg ctg ttc ctg acg gcc 48 Met Lys Leu Thr Cys Met Leu Ile Ile Ala Val Leu Phe Leu Thr Ala 10 tgt caa ctc tct aca aat gcg agt tac gcc aga agt aag cag aag cat 96 Cys Gln Leu Ser Thr Asn Ala Ser Tyr Ala Arg Ser Lys Gln Lys His 20 cqt qtt ctq aqq tcq act qac aaa aac tcc aaq ttq acc caq cqt tqc 144 Arg Val Leu Arg Ser Thr Asp Lys Asn Ser Lys Leu Thr Gln Arg Cys 35 aat gaa gct caa gaa cat tgc act caa aat cct gac tgc tgc agt gag 192 Asn Glu Ala Gln Glu His Cys Thr Gln Asn Pro Asp Cys Cys Ser Glu

tct tgc aat aag ttt gtc ggc aga tgc ttg tca gac tgatctgatg

Ser Cys Asn Lys Phe Val Gly Arg Cys Le  $_{2}$  Ser Asp 65 70 75

238

253 tetteteete ceate <210> 207 <211> 76 PRT <212> <213> Conus distans <400> 207 Met Lys Leu Thr Cys Met Leu Ile Ile Ala Val Leu Phe Leu Thr Ala Cys Gln Leu Ser Thr Asn Ala Ser Tyr Ala Arg Ser Lys Gln Lys His Arg Val Leu Arg Ser Thr Asp Lys Asn Ser Lys Leu Thr Gln Arg Cys Asn Glu Ala Gln Glu His Cys Thr Gln Asn Pro Asp Cys Cys Ser Glu Ser Cys Asn Lys Phe Val Gly Arg Cys Leu Ser Asp 70 <210> 208 <211> 29 <212> PRT <213> Conus distans <220> <221> SITE (1)..(29) <222> Xaa at residues 3, 6 and 17 may be Glu or gamma-carboxy-Glu; Xaa <223> at residue 12 may be Pro or hydroxy-Pro <400> 208 Cys Asn Xaa Ala Gln Xaa His Cys Thr Gln Asn Xaa Asp Cys Cys Ser Xaa Ser Cys Asn Lys Phe Val Gly Arg Cys Leu Ser Asp <210> 209 <211> 259 <212> DNA <213> Conus ammiralis <220> <221> CDS (1)..(228)<222> <400> 209 atg aaa ctg acg tgc ctg atg atc gtt gct gtg ctg ttc ttg acc gcc

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10

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ctt tat ctg aag gca cat cat gaa atg aac aac ccc gaa gac tct gaa Leu Tyr Leu Lys Ala His His Glu Met Asn Asn Pro Glu Asp Ser Glu 35 40 45	144
ttg aac aag agg tgc tat gat ggt ggg aca agt tgt aac act gga aac Leu Asn Lys Arg Cys Tyr Asp Gly Gly Thr Ser Cys Asn Thr Gly Asn 50 55 60	192
caa tgc tgc agt ggc tgg tgc att ttc ctc tgc ctc taaaactgcc Gln Cys Cys Ser Gly Trp Cys Ile Phe Leu Cys Leu 65 70 75	238
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Leu Tyr Leu Lys Ala His His Glu Met Asn Asn Pro Glu Asp Ser Glu 35 40 45	
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tcc agc aat gcg ttg gag aat ctt tat ctg aag gca cat cat gaa atg Ser Ser Asn Ala Leu Glu Asn Leu Tyr Leu Lys Ala His His Glu Met 30 35 40	147
aac aac ccc gaa gcc tct gaa ttg aac aag agg tgc tat gat agt ggg Asn Asn Pro Glu Ala Ser Glu Leu Asn Lys Arg Cys Tyr Asp Ser Gly 45 50 55	195
aca agt tgt aac act gga aac caa tgc tgc agt ggc tgg tgc att ttc Thr Ser Cys Asn Thr Gly Asn Gln Cys Cys Ser Gly Trp Cys Ile Phe 60 65 70	243
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		_	•	'yr (	or 0-	-phos	spho-	-Tyr;	: Xaa	a at	resi	idue	18 r	nay be	Trp or
	bro	no-Tı	cp												
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Cys Xa		Cor	C1.77	πhъ	Cor	Cvc	7 en	Πρχ	Clv	Aen	Gln	Cvc	Cve	Ser	
1	a Asp	ser	5 5	1111	per	Суз	ASII	10	Сту	A511	GIII	Cys	15	Der	
Clar Va	o Ca	T10	Dho	Wal.	Sor	Cue	Lou								
Gly Xa	a Cys	20	rne	Val	per	Cys	25								
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мет шу 1	s Leu	Thr	Cys 5	Met	мес	TTe	val	10	vaı	ьеи	FIIE	теп	15	ALG	
							4		4					~++	0.6
tgg ac Trp Th	g cta r Leu	gtc Val	atg Met	gct	gat	gac	Ser	aac Asn	Asn	gga Glv	Leu	gcg	Asn	Leu	96
11P 111	ı içu	20	1100	2114	1100	пор	25	11011	11011	<u>, , , , , , , , , , , , , , , , , , , </u>	100	30		200	
<b>.</b>	~ ^^	+ ~ ~	~~+	an a	<i>α</i>	2+4	~~~	<b>~</b> ~ ~	000	~~~	act	t at	222	++~	144
ttt tc Phe Se	g aaa r Lvs	Ser	Ara	Asp	Glu	Met	Glu	Asp	Pro	Glu	Ala	Ser	Lvs	Leu	144
	35		9	F		40		I.	-		45	_		-	
gag aa	2 200	a=+	tac	caa	acə	cta	taa	gat	tat	tat	cca	ata	cca	ctc	192
Glu Ly	a ayy s Arq	Asp	Cys	Gln	Ala	Leu	Trp	Asp	Tyr	Cys	Pro	Val	Pro	Leu	172
50	_	-	-		55		-	-	_	60					
ttg tc	a tod	gat	gat	tac	tac	tat	aac	tta	atc	tat	gac	cat	tta	atc	240
Leu Se															2.10
65		_		70					75					80	
tgc at	t qqa	taa	tga	tgtc	ttc	tact	ccca <sup>.</sup>	tc							272
Cys Il			<i>J</i>	J	-										
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Trp Thr Leu Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn Leu 20 25 30

Phe Ser Lys Ser Arg Asp Glu Met Glu Asp Pro Glu Ala Ser Lys Leu 35 40 45

Glu Lys Arg Asp Cys Gln Ala Leu Trp Asp Tyr Cys Pro Val Pro Leu 50 60

Leu Ser Ser Gly Asp Cys Cys Tyr Gly Leu Ile Cys Gly Pro Phe Val 65 70 75 80

Cys Ile Gly Trp

<210> 217

<211> 33

<212> PRT

<213> Conus gloriamaris

<220>

<221> SITE

<222> (1)..(33)

Xaa at residues 6 and 33 may be Trp or bromo-Trp; Xaa at residues 8 and 21 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or O-phospho-Tyr; Xaa at residues 10, 12 and 27 may be P ro or hydroxy-Pro

<400> 217

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Gly Asp Cys Cys Xaa Gly Leu Ile Cys Gly Xaa Phe Val Cys Ile Gly 20 25 30

Xaa

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<211> 275

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<221> CDS

<222> (1)..(249)

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96

48

tgg aca ttc gtc atg gct gat gac tcc aac aat gga ctg gca aat ctt

									))	,							
Trp	Thr	Phe	Val 20	Met	Ala	Asp	Asp	Ser 25	Asn	Asn	Gly	Leu	Ala 30	Asn	Leu		
ttc Phe	tcg Ser	aaa Lys 35	tca Ser	cgt Arg	gac Asp	gaa Glu	atg Met 40	gag Glu	gat Asp	acc Thr	gat Asp	cct Pro 45	tct Ser	aaa Lys	ttg Leu	-	144
gag Glu	aac Asn 50	aga Arg	aaa Lys	act Thr	tgc Cys	caa Gln 55	aga Arg	agg Arg	tgg Trp	gat Asp	ttt Phe 60	tgt Cys	cca Pro	gga Gly	tcg Ser	-	192
ctc Leu 65	gtt Val	gga Gly	gtg Val	ata Ile	act Thr 70	tgc Cys	tgc Cys	ggt Gly	ggc Gly	tta Leu 75	atc Ile	tgt Cys	ttt Phe	ctg Leu	ttc Phe 80	2	240
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<210> 219 <211> 83 <212> PRT <213> Conus omaria

<400> 219

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Trp Thr Phe Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn Leu 20 25 30

Phe Ser Lys Ser Arg Asp Glu Met Glu Asp Thr Asp Pro Ser Lys Leu 35 40 45

Glu Asn Arg Lys Thr Cys Gln Arg Arg Trp Asp Phe Cys Pro Gly Ser 50 55 60

Leu Val Gly Val Ile Thr Cys Cys Gly Gly Leu Ile Cys Phe Leu Phe 65 70 75 80

Phe Cys Val

<210> 220 <211> 32 <212> PRT <213> Conus omaria

<221> SITE <222> (1)..(32)

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<400> 220

Lys Thr Cys Gln A	rg Arg Xaa As	sp Phe Cys Xaa 10	Gly Ser Leu	Val Gly 15
Val Ile Thr Cys C	ys Gly Gly Le	eu Ile Cys Phe 25	Leu Phe Phe 30	Cys Val
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tgg acg cta gtc a Trp Thr Leu Val M 20				
ttt tcg aaa tta c Phe Ser Lys Leu A 35		et Glu Asp Pro		
gag aaa aag gat to Glu Lys Lys Asp C 50				
ttg gga tcg agg t Leu Gly Ser Arg T 65				
tgc gct tgatagtga Cys Ala	t gtcttctcta	ttcccctc		274
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Trp Thr Leu Val M	et Ala Asp As	sp Ser Asn Asn 25	Gly Leu Ala 30	Asn Leu
Phe Ser Lys Leu A 35	rg Asp Glu Me 40	_	Glu Gly Ser 45	Lys Leu
Glu Lys Lys Asp C 50	ys Gln Glu Ly 55	ys Trp Asp Tyr	Cys Pro Val	Pro Phe

Leu Gly Ser Arg Tyr Cys Cys Asp Gly Phe Ile Cys Pro Ser Phe Phe

Cys Ala <210> 223 <211> 31 <212> PRT <213> Conus dalli <220> <221> SITE <222> (1)..(31)<223> Xaa at residue 4 may be Glu or gamma-carboxy-Glu; Xaa at residue 6 may be Trp or bromo-Trp; Xaa at residues 8 and 18 may be Tyr, 1 25-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 10, 12 and 26 may be Pro or hydroxy-Pro <400> 223 Asp Cys Gln Xaa Lys Xaa Asp Xaa Cys Xaa Val Xaa Phe Leu Gly Ser Arg Xaa Cys Cys Asp Gly Phe Ile Cys Xaa Ser Phe Phe Cys Ala <210> 224 <211> 271 <212> DNA <213> Conus dalli <220> <221> CDS <222> (1)..(252) <400> 224 atg aaa ctg acg tgc gtg atg atc gtt gct gtg ttg ttc ctg aca gcc Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 48 tgg acq cta qtc atg qct qat gac tcc aac aat gga ctg gcg aat cat 96 Trp Thr Leu Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn His 25 20 ttt tqq aaa tca cgt gac gaa atg gag gac cct gaa gct tct aaa ttg 144 Phe Trp Lys Ser Arg Asp Glu Met Glu Asp Pro Glu Ala Ser Lys Leu gag aaa agg gat tgc caa ggc gaa tgg gag ttt tgt ata gta ccg gtc 192 Glu Lys Arg Asp Cys Gln Gly Glu Trp Glu Phe Cys Ile Val Pro Val ctt gga ttt gtg tat tgc tgc ccc tgg ctt atc tgt ggc cct ttc gtc 240 Leu Gly Phe Val Tyr Cys Cys Pro Trp Leu Ile Cys Gly Pro Phe Val 65 70 75 80 75 tgc gtt gat atc tgatgtcttc tatcccctc 271 Cys Val Asp Ile

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Phe Trp Lys Ser Arg Asp Glu Met Glu Asp Pro Glu Ala Ser Lys Leu
                            40
Glu Lys Arg Asp Cys Gln Gly Glu Trp Glu Phe Cys Ile Val Pro Val
                        55
Leu Gly Phe Val Tyr Cys Cys Pro Trp Leu Ile Cys Gly Pro Phe Val
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Cys Val Asp Ile
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       (1)..(33)
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       esidues 6 and 22 may be Trp or bromo-Trp; Xaa at residues 12, 21
       and 27 may be Pro or hydroxy-Pro;
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       SITE
<222>
       (1)..(33)
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       yr, O-sulpho-Tyr or O-phospho-Tyr
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Val Xaa Cys Cys Xaa Xaa Leu Ile Cys Gly Xaa Phe Val Cys Val Asp
Ile
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taaaact	gct (	gtgai	igtat	tt ci	tctto	cccat	С								265
<210><211><211><212><213>	228 78 PRT Conus	s pei	nnace	eus											
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Met Lys 1	s Leu	Thr	Cys 5	Leu	Met	Ile	Ile	Ala 10	Val	Leu	Phe	Leu	Thr 15	Ala	
Trp Thi	r Phe	Val 20	Met	Ala	Asp	Asp	Pro 25	Arg	Asp	Glu	Pro	Glu 30	Ala	Arg	
Asp Glu	ı Met 35	Asn	Pro	Ala	Ala	Ser 40	Lys	Leu	Asn	Glu	Arg 45	Gly	_	Leu	
Glu Vai	l Asp	Tyr	Phe	Cys	Gly 55	Ile	Pro	Phe	Val	Asn 60	Asn	Gly	Lev	Cys	
Cys Se: 65	r Gly	Asn	Cys	Val 70	Phe	Val	Cys	Thr	Pro 75	Gln	Gly	Lys			
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Gly Leu Cys Cys Ser Gly Asn Cys Val Phe Val Cys Thr Xaa Gln 20 25 30
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g aac gag aga gac tgc ctt aat gtt gat tat ttt tgc ggc ata ccg ttt 169 Asn Glu Arg Asp Cys Leu Asn Val Asp Tyr Phe Cys Gly Ile Pro Phe 1 5 10 15
gtg aac aac ggg cta tgc tgc agt ggc aat tgt gtt ttt gtc tgc aca Val Asn Asn Gly Leu Cys Cys Ser Gly Asn Cys Val Phe Val Cys Thr 20 25 30
ccc caa ggg aag taaaactgcc gtgatgtctt ctcttcccct ctagtagtag 269 Pro Gln Gly Lys 35 .
taggeggeeg etetagagga tecaagetta egtaegegtg eatgegaegt eatagetett 329
ctatagtgtc acctaaattc aattcactgg ccgtccgttt tacaacgtcg tgactgggaa 389
aaccetggeg ttacceaact taategeett geageacat 428
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Val Asn Asn Gly Leu Cys Cys Ser Gly Asn Cys Val Phe Val Cys Thr 20 25 30

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Pro Gln Gly Lys
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       r, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 11 and 29 may b
       e Pro or hydroxy-Pro
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                                                                      116
                                                  Leu Asp Lys Arg
gag tgc ctg gaa gct gat tat tat tgc gtc tta ccg ttt gtg ggc aac
                                                                      164
Glu Cys Leu Glu Ala Asp Tyr Tyr Cys Val Leu Pro Phe Val Gly Asn
                                         15
                                                             20
ggg atg tgc tgc agt ggc att tgt gtt ttt gtc tgc ata gcc caa cgc
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Phe Lys Thr Val
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<400>
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	c tgt ggt cct ttc gtc tgc gtt tgatagtgat gtcttctcct e Cys Gly Pro Phe Val Cys Val 30	267
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       hydroxy-Pro; Xaa at residues 10 and 28 may be Trp or bromo-Trp; X
       aa at residue 17 may be Glu or gamma-carboxy-Glu
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Leu Ile Lys Asn Gly Leu Cys Cys Ser Gln Ile Cys Leu Gly Val Cys
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Ala Lys Val Phe
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Val Phe Gly Ser Tyr Leu Cys Cys Ser Gly Arg Cys Val Phe Val Cys
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gtc tagttgaact gccgtgatgt cttctactcc cat
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be Trp or bromo-Trp; Xaa at residue 23 may be Tyr, 125-I-Tyr, mon o-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr

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1 5 10 15

tgt cag ttc atc gta gct ggc gac tcg agt gat ggc cag gag aat cct 96 Cys Gln Phe Ile Val Ala Gly Asp Ser Ser Asp Gly Gln Glu Asn Pro 20 25 30

gct ctg agg tca cct agc gat tcc tct ggg aaa atg tca tca atg aag 144 Ala Leu Arg Ser Pro Ser Asp Ser Ser Gly Lys Met Ser Ser Met Lys 35 40 45

cgc ttc cag aca cgg ctg atg gtg ggg caa tct gca tcg aaa aga cca 192
Arg Phe Gln Thr Arg Leu Met Val Gly Gln Ser Ala Ser Lys Arg Pro
50 55 60

240

285

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Ala Leu Arg Ser Pro Ser Asp Ser Ser Gly Lys Met Ser Ser Met Lys 40 Arg Phe Gln Thr Arg Leu Met Val Gly Gln Ser Ala Ser Lys Arg Pro Ser Lys Arg Asp Cys Ile Pro Gly Glu Asn Cys Asp Val Phe Arg Pro Tyr Arg Cys Cys Ser Gly Tyr Cys Ile Leu Leu Cys Ala <210> 265 <211> 28 <212> PRT Conus delessertii <213> <220> <221> SITE <222> (1)..(28)Xaa at residues 4 and 14 may be Pro or hydroxy-Pro; Xaa at residu <223> e 7 may be Glu or gamma-carboxy-Glu; Xaa at residues 15 and 21 ma y be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr <400> 265 Asp Cys Ile Xaa Gly Gly Xaa Asn Cys Asp Val Phe Arg Xaa Xaa Arg Cys Cys Ser Gly Xaa Cys Ile Leu Leu Cys Ala <210> 266 1009 <211> <212> DNA <213> Conus striatus <220> <221> <222> (147)..(233)<220> misc\_feature <221> <222> (1)..(1009)<223> n may ba any nucleotide <400> 266 gctggttcgc ctgcaggtac cggtccggaa ttcccgggtc gacatcatca tcatcgatcc 60 atctgtccat ccatctattc attcattcat tcgctgccaa actgtattaa atattcaagt 120 ctctctttct gtttgtgtct aacaga ttg aga tgg tgc att cct agt ggt gaa 173 Leu Arg Trp Cys Ile Pro Ser Gly Glu ctt tgt ttc cgc tcg gat cac ata gga tgc tgc agt ggc aag tgc gca 221

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gctccatcct tttctgcctg agtcctcctt acctgagagt ggtcatgaac cactcatcac 207
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118	
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Phe Val Thr Ala Val Asp Ser Lys Asn Glu Leu Glu Asn Arg Gly Gly
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-Tyr.	mono-iodo-Tyr,	di-iodo-Tur	O-culpho-Tur	~ ~	O shoosha Maria
- y - ,	mono rodo-ryr,	ar-rodo-ryr,	O-Sulpho-Tyr	or	O-phospho-Tyr

-Tyr, mono-iodo-Tyr,	di-iodo-Tyr, O-sulpho-Tyr or O-phospho-	Tyr
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Phe Arg Lys Ala Arg Asp Asn	atg aag aac gcc aaa gcc tct aca tta Met Lys Asn Ala Lys Ala Ser Thr Leu 40 45	144
gcc gag aag aaa gcg tgt gtt Ala Glu Lys Lys Ala Cys Val 50 55	gaa ctt ggt gag att tgt gcc aca ggc Glu Leu Gly Glu Ile Cys Ala Thr Gly 60	192
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gaa cga aac gaa aac gaa atg aag aac ctc gaa gcc tct aaa ttg aac 144 Glu Arg Asn Glu Asn Glu Met Lys Asn Leu Glu Ala Ser Lys Leu Asn 35 40 45
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	cga tgc tgc agt cag Arg Cys Cys Ser Gln 70		
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es 8 and 13	dues 4 and 12 may be may be Tyr, 125-I-Ty or O-phospho-Tyr; Xaa	Pro or hydroxy-Pro r, mono-iodo-Tyr,	di-iodo-Tyr, O-

o-Trp

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Lys Leu Asn Glu Arg Cys Leu Glu Lys Gly Val Leu Cys Asp Pro Ser
50
60

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50

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60

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15 20 25 30

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Lys Ile Gly Gly Pro Cys Cys Ser Gly Tro Cys Phe Phe Val Cys Leu
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<213> Conus arenatus

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       p or bromo-Trp
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Thr Ala Trp Thr Phe Ile Thr Ala Asp Asp Ser Ile Asn Gly Leu Glu
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134								
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Asn Lys 50	Arg	Cys	Val	Asp	Pro 55	Gly	Glu	Phe	Cys	Gly 60	Pro	Gly	Phe	Gly	
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Trp Thr P	he Val 20	Met Al	a Asp	Asp	Ser 25	Arg	Asn	Asp	Leu	Glu 30	Asn	Leu	
Phe Leu L 3	ys Ala 5	Arg Hi	s Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
Asn Lys A 50	∆rg Cys	Leu Pr	o Asn 55	Gly	Val	Leu	Cys	Asp 60	Leu	Gly	Ser	Pro	
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Pro Tyr Cys Cys Ser Gly Trp Cys Ala Ile Val Val Cys Ile

65	70	75	
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Cys Ser Gly Xaa Cys 20	Ala Ile Val Val Cy 25	vs Ile	
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gaa caa aac tgc tgc tat acc tat tgc ttt att gta gtc tgc cta 237 Glu Gln Asn Cys Cys Tyr Thr Tyr Cys Phe Ile Val Val Cys Leu 65 70 75
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Phe Ser Lys Ala His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45
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Lys Leu Asp Lys Lys Cys Leu Gly Phe Gly Glu Ala Cys Leu Met Leu

55

60

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       e Pro or hydroxy-Pro
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ctt tgt ttc ccc tcg gat cgc ata caa tgc tgc agt ggc aag tgc aca
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Leu Cys Phe Pro Ser Asp Arg Ile Gln Cys Cys Ser Gly Lys Cys Thr
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Phe Val Cys Met
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be Glu or gamma-carboxy-Glu; Xaa at residue 10 may be Tyr, 125-Î-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr

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Cys Cys Ser	Gly Lys Cy 20	s Thr Phe Va	-		
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ttg ccg aac Leu Pro Asn 35					
aac aag aaa Asn Lys Lys 50				he Cys Leu	
cca gga ctc Pro Gly Leu 65					234
tagtgacggt t	gatgtette	actcccctc			264
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Trp Thr Phe	Val Thr Al. 20	a Asp Asp Se 25	er Thr Tyr G. 5	ly Leu Lys 30	Asn Leu
Leu Pro Asn 35	Gly Arg Hi	s Glu Met Me 40	et Asn Pro G	Slu Ala Pro 45	Lys Leu
Asn Lys Lys 50	Asp Glu Cy	s Ser Ala P 55	ro Gly Ala P 6	Phe Cys Leu	Ile Arg

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Cys Cys Ser Xaa Phe Cys Phe Phe Ala Cys Phe 20 25
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cgc aaa gac ttt gaa ttg aga ggg tgc ctt cct agg tgg gaa ttt tgt 192 Arg Lys Asp Phe Glu Leu Arg Gly Cys Leu Pro Arg Trp Glu Phe Cys 50 55 60
ccc atc ttt aaa aaa aac gat tgc tgc agt ggc ata tgc ata agc atc Pro Ile Phe Lys Lys Asn Asp Cys Cys Ser Gly Ile Cys Ile Ser Ile 65 70 75 80
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20105 254

<sup>&</sup>lt;210> 354 <211> 82 <212> PRT <213> Conus bullatus

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Arg Lys Asp Phe Glu Leu Arg Gly Cys Leu Pro Arg Trp Glu Phe Cys
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Cys Leu
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       e 6 may be Trp or bromo-Trp; Xaa at residue 7 may be Glu or gamma
       -carboxy-Glu
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Cys Cys Ser Gly Ile Cys Ile Ser Ile Cys Leu
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Trp Ile Phe Val Met Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu

			20					25					30			
	_	act Thr 35		_		_	_	_				_				144
	-	aca Thr	_			_		_	_		_	_		_		192
		cca Pro														237
taaa	aacto	gaa g	gtgat	gtct	t ct	acto	ccct	c c								268
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Asp 1	Cys	Leu	Ala	Lys 5	Asp	Ala	Phe	Суғ	Ala 10	Xaa	Xaa	Ile	Leu	Gly 15	Xaa	
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Phe Ser

## 151

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tgg aca Trp Thr	ttc Phe	gtc Val 20	acg Thr	gct Ala	gat Asp	gac Asp	tcc Ser 25	aga Arg	aat Asn	gga Gly	ttg Leu	gag Glu 30	aat Asn	ctt Leu	96
tct ccg Ser Pro															144
aac aag Asn Lys 50															192
gga gga Gly Gly 65															240
ttt tcg Phe Ser	_	igtet	itc t	cct	ccct	cc									266
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Trp Thr	Phe	Val 20	Thr	Ala	Asp	Asp	Ser 25	Arg	Asn	Gly	Leu	Glu 30	Asn	Leu	
Ser Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Ser	
Asn Lys 50	: Arg	Tyr	Glu	Cys	Tyr 55	Ser	Thr	Gly	Thr	Phe 60	Cys	Gly	Ile	Asn	
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Xaa Xa 1	a Cys	Xaa	Ser 5	Thr	Gly	Thr	Phe	Cys 10	Gly	Ile	Asn	Gly	Gly 15	Leu		
Cys Cy	s Ser	Asn 20	Leu	Cys	Leu	Phe	Phe 25	Val	Cys	Leu	Thr	Phe 30	Ser			
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ttt cc Phe Pr															14	4
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cca go Pro Gl 65															24	0
gtt ga Val As			taa	cagto	gtg (	cgtt	ggtt	ga to	gtcti	ctad	c to	ccct	Z		28	9
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Val Asp Ser Gly
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       hydroxy-Pro; Xaa at residue 20 may be Glu or gamma-carboxy-Glu;
       Xaa at residue 25 may be Trp or bromo-Trp
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Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Val Asp Ser
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gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc aat gcc aag tgc 160 Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys gca ttc gtc tgc ttg taaaactgcc gtgatgtctt ctcttccctc 205 Ala Phe Val Cys Leu 30 <210> 366 <211> 31 <212> PRT <213> Conus circumcisus <400> 366 Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys Ala Phe Val Cys Leu 2.5 <210> 367 <211> 26 <212> PRT <213> Conus circumcisus <220> <221> SITE <222> (1)..(26)<223> Xaa at residues 3 and 10 may be Pro or hydroxy-Pro. <400> 367 Cys Ile Xaa Ser Gly Asp Leu Cys Phe Xaa Ser Asp His Ile Gln Cys 10 Cys Asn Ala Lys Cys Ala Phe Val Cys Leu <210> 368 <211> 206 <212> DNA <213> Conus circumcisus <220> <221> CDS <222> (83)..(175)<400> 368 cgatccatct gtccatccat ctattcattc attcgctgtc aaactgtatt aaatattcaa 60 gtctctcttt ctgtttgtgt ct aac aga ttg agt tgg tgc att cct agt ggt 112 Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly

gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc agt gcc aag tgc

Asp Leu Cys Phe Pro Ser Asp Mis Ile Gln Cys Cys Ser Ala Lys Cys

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                                                                     112
                         Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly
gat ctt tgt ttc ccc tcg gat cac ata caa tgc tqc aqt qcc aaq tqc
                                                                     160
Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Ser Ala Lys Cys
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Ala Phe Val Cys Leu
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                         Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly
                         1
gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc aat gcc gag tgc
                                                                     160
Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Glu Cys
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Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly

1 5 10

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Asp Leu Cys Phe Pro Ser Asp His Ile Arg Cys Cys Ser Ala Lys Cys
15 20 25

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Cys Cys Ser Ala Lys Cys Ala Phe Val Cys Leu 20 25
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gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc aat gcc aag tgc Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys 15 20 25
gca ttc gcc tgc ttg taaaactgcc gtgatgtctt ctcttcccct c 206 Ala Phe Ala Cys Leu 30
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Asp His Ile Gln Cys Cys Asn Ala Lys Cys Ala Phe Ala Cys Leu 20 25 30

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Cys Asn Ala Lys Cys Ala Phe Ala Cys Leu
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                                                                     112
                         Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly
                                                             10
gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc aat gcc aag tgc
                                                                     160
Asp Leu Cys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys
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Ala Phe Val Cys Leu
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       31
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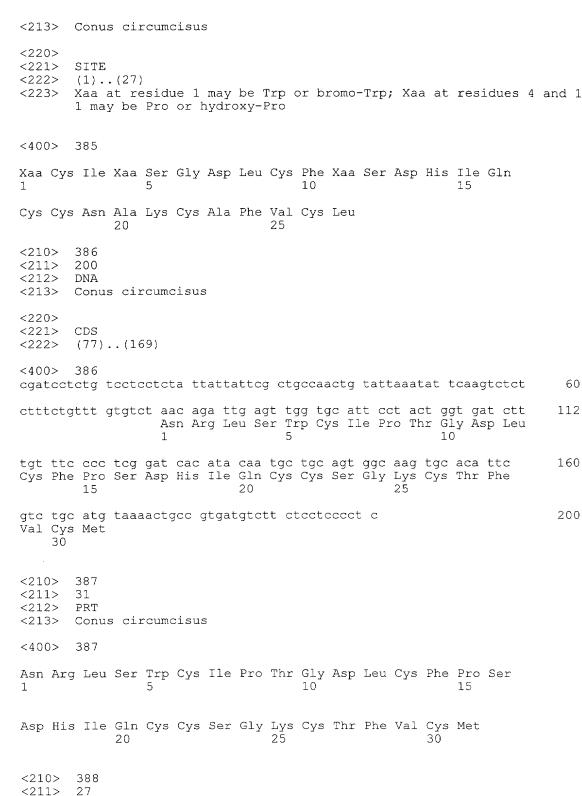
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Cys Cys Ser Gly Lys Cys Thr Phe Val Cys Met 20 25
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tct ccg aag gca cgt cac gaa atg aag aac ccc gaa gcc tct aaa tcg Ser Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Ser 35 40 45
aac aag aga tat gag tgc tat tct act ggt aca ttt tgt ggc atc aac 192 Asn Lys Arg Tyr Glu Cys Tyr Ser Thr Gly Thr Phe Cys Gly Ile Asn 50 55 60
gga gga ctc tgc tgc agc aac ctt tgc tta ttt ttc gtg tgc tta aca Gly Gly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr 65 70 75 80
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<210> 390 <211> 82 <212> PRT <213> Conus monachus
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Trp Thr Phe Val Thr Ala Asp Asp Ser Ard Asn Gly Leu Glu Asn Leu 20 25 30

Ser Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Ser

35 40 45 Asn Lys Arg Tyr Glu Cys Tyr Ser Thr Gly Thr Phe Cys Gly Ile Asn 55 Gly Gly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr 70 Phe Ser <210> 391 <211> 31 <212> PRT <213> Conus monachus <220> <221> SITE <222> <223> Xaa at residues 1 and 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, diiodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 2 may be Glu or gamma-carboxy-Glu <400> 391 Xaa Xaa Cys Xaa Ser Thr Gly Thr Phe Cys Gly Ile Asn Gly Gly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr Phe Ser 25 <210> 392 <211> 277 <212> DNA <213> Conus stercusmuscarum <220> <221> CDS <222> (1)..(246) <400> 392 atg aaa ctg acg tgc atg atg atc gtt gct gtg ctg ttc ttg acc gcc Met Lys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu Thr Ala 10 tgg aca ttc gtc aca gct gat gac tcc ata aat gga ccg gag aat aga 96 Trp Thr Phe Val Thr Ala Asp Asp Ser Ile Asn Gly Pro Glu Asn Arg cga ata tgg gag aaa ctt ttg ttg aay gca cgt gac gaa atg aag aac 144 Arg Ile Trp Glu Lys Leu Leu Lys Ala Arg Asp Glu Met Lys Asn ccc gaa gcc tct caa ttg aga tgg tgc att cct agt ggt gaa ctt tgt 192 Pro Glu Ala Ser Gln Leu Arg Trp Cys Ile Pro Ser Gly Glu Leu Cys 55 ttc cgc tcg gat cac ata caa tgc tgc agt gcc aag tgc gca ttc gtc

Phe Arg Ser Asp His Ile Gln Cys Cys Ser Ala Lys Cys Ala Phe Val

tgc ttg taaaactacc gtgatgtctt ctcctcccat c Cys Leu

163

75

80

277

<210> 393

<211> 82

65

<212> PRT

<213> Conus stercusmuscarum

<400> 393

Met Lys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu Thr Ala  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Trp Thr Phe Val Thr Ala Asp Asp Ser Ile Asn Gly Pro Glu Asn Arg 20 25 30

Arg Ile Trp Glu Lys Leu Leu Lys Ala Arg Asp Glu Met Lys Asn 35 40 45

Pro Glu Ala Ser Gln Leu Arg Trp Cys Ile Pro Ser Gly Glu Leu Cys 50 55 60

Phe Arg Ser Asp His Ile Gln Cys Cys Ser Ala Lys Cys Ala Phe Val 65 70 75 80

Cys Leu

<210> 394

<211> 27

<212> PRT

<213> Conus stercusmuscarum

<220>

<221> SITE

<222> (1)..(27)

<223> Xaa at residue 1 may be Trp or bromo-Trp; Xaa at residue 4 may be Pro or hydroxy-Pro; Xaa at residue 7 may be Glu or gamma-carboxy-Glu

<400> 394

Xaa Cys Ile Xaa Ser Gly Xaa Leu Cys Pro Arg Ser Asp His Ile Gln 1 5 10 15

Cys Cys Ser Ala Lys Cys Ala Phe Val Cys Leu

<210> 395

<211> 266

<212> DNA

<213> Conus stercusmuscarum

164																	
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	aaa	395 ctg Leu														4	8
		ttc Phe														9	6
		aag Lys 35														14	4
aac Asn	aag Lys 50	aga Arg	gat Asp	ggg Gly	tgc Cys	tct Ser 55	agt Ser	ggt Gly	ggt Gly	aca Thr	ttt Phe 60	tgt Cys	ggc Gly	atc Ile	cgt Arg	19:	2
		ctc Leu														240	0
att Ile	-	tgat	gtct	itc t	atto	ecct	C									266	6
<210 <211 <212 <213	.> 8 ?> I	396 32 PRT Conus	s ste	ercus	smusc	carum	ı										
<400	)> 3	396															
Met 1	Lys	Leu	Thr	Cys 5	Val	Met	Ile	Val	Ala 10	Val	Leu	Phe	Leu	Ile 15	Ala		
Trp	Thr	Phe	Val 20	Thr	Ala	Asp	Asp	25	Arg		Gly	Leu	Lys 30	Asn	Leu		
Phe	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu		
Asn	Lys 50	Arg	Asp	Gly	Cys	Ser 55	Ser	Gly	Gly	Thr	Phe 60	Cys	Gly	Ile	Arg		
Pro 65	Gly	Leu	Cys	Cys	Ser 70	Glu	Phe	Cys	Phe	Leu 75	Trp	Cys	Ile	Thr	Phe 80		

Ile Asp

<210> 397 <211> 31 <212> PRT

<213> Conus stercusmuscarum
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<400> 397
Asp Gly Cys Ser Ser Gly Gly Thr Phe Cys Gly Ile Arg Xaa Gly Leu 1 5 10 15
Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Ile Asp 20 25 30
<210> 398 <211> 265 <212> DNA <213> Conus striolatus
<220> <221> CDS <222> (1)(234)
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tgg aca ttc gtc acg gct gat gac tcc aga aat gga ttg gag aat ctt 96 Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu 20 25 30
ctt ctg aag aca cgt cac gaa gtg gaa aac ccc aaa gcc tct agg tcg Leu Leu Lys Thr Arg His Glu Val Glu Asn Pro Lys Ala Ser Arg Ser 35 40 45
ggc ggt agg tgc cgt cct ggt ggt acg gtt tgt ggc ttt ccg aaa cct 192 Gly Gly Arg Cys Arg Pro Gly Gly Thr Val Cys Gly Phe Pro Lys Pro 50 55 60
gga cca tac tgc tgc agt ggc tgg tgc ttt ttt gtc tgc gcc Gly Pro Tyr Cys Cys Ser Gly Trp Cys Phe Phe Val Cys Ala 65 70 75
taaacctgcc gtgatgtctt ctcctcccat c 265
<210> 399 <211> 78 <212> PRT <213> Conus striolatus
<400> 399
Met Lys Leu Thr Cys Ile Met Thr Val Ala Val Leu Phe Leu Thr Ala 1 5 10 15

Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu 20 25 30

165

107.499.701

Leu Leu Lys Thr Arg His Glu Val Glu Asn Pro Lys Ala Ser Arg Ser 35 Gly Gly Arg Cys Arg Pro Gly Gly Thr Val Cys Gly Phe Pro Lys Pro 55 Gly Pro Tyr Cys Cys Ser Gly Trp Cys Phe Phe Val Cys Ala <210> 400 <211> 27 <212> PRT <213> Conus striolatus <220> <221> SITE <222> (1)..(27)Xaa at residues 3, 11, 13 and 15 may be Pro or hydroxy-Pro; Xaa a t residue 16 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O -sulpho-Tyr or O-phospho-Tyr; Xaa at residue 21 may be Trp or bro mo-Trp <400> 400 Cys Arg Xaa Gly Gly Thr Val Cys Gly Phe Xaa Lys Xaa Gly Xaa Xaa 10 Cys Cys Ser Gly Xaa Cys Phe Phe Val Cys Ala <210> 401 <211> 272 <212> DNA <213> Conus striolatus <220> <221> CDS <222> (1)..(243)<400> 401 atg aaa ctg acg tgc gtg atg atc gtt gct gtg ctg ttc ttg act gcc Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 48 5 10 15 tgg aca ttc gtc acg gct gat gac tcc aaa aat gga ctg gag aat cat 96 Trp Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His 2.0 30 ttt tgg aag gca cgt gac gaa atg aag aac cgc gaa gcc tct aaa ttg 144 Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu gac aaa aag gaa gcc tgc tat ccg cct qqt act ttt tqt qqc ata aag 192 Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys ccc ggg cta tgc tgc agt gag ttg tgt tta ccg gcc gtc tgc gtc ggt

Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly

ggt taactgccgt gatgtcttct attcccctc Gly

167

75

<210> 402

<211> 81

PRT <212>

<213> Conus striolatus

<400> 402

Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala

Trp Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His

Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu

Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys

Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly

Gly

<210> 403

<211> 29

<212> PRT

<213> Conus striolatus

<220>

SITE <221>

<222> (1)..(29)

<223> Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-s ulpho-Tyr or O-phospho-Tyr; Xaa at residues 5, 6, 14 and 24 may b e Pro or hydroxy-Pro

<400> 403

Xaa Ala Cys Xaa Xaa Kaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu

Cys Cys Ser Xaa Leu Cys Leu Xaa Ala Val Cys Val Gly

<210> 404

<211> 265

<212> DNA

<213> Conus striolatus

272

<210> 406 <211> 31

## 168

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		ttc Phe														96
		aag Lys 35														144
	_	aga Arg			-							_				192
		ctc Leu														240
	tcg Ser	tgat	igtet	tc t	atco	ccto	2									265
<210 <211 <212 <213	-> { !> !	105 32 PRT Conus	s str	riola	atus											
<400	)> 4	105														
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Arg	Thr	Phe	Val 20	Thr	Ala	Asp	Asp	Ser 25	Arg	Asn	Gly	Leu	Glu 30	Asn	Leu	
Ser	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Ser	
Asn	Lys 50	Arg	Tyr	Glu	Cys	Tyr 55	Ser	Thr	Gly	Thr	Phe 60	Cys	Gly	Ile	Asn	
Gly 65	Gly	Leu	Cys	Cys	Ser 70	Asn	Leu	Cys	Leu	Phe 75	Phe	Val	Cys	Leu	Thr 80	
Phe	Ser															

Hit to





<212> <213>	PRT Conu	s st	riol	atus											
<220> <221> <222> <223>	Xaa	-Tyr	esid , O-	sulp	ho-T	yr o	may : r O-;	be T phos	yr, pho-'	125- Tyr;	I-Ty Xaa	r, m	ono- resi	iodo-Tyr, due 2 may	di- ⁄be
<400>	406														
Xaa Xaa 1	a Cys	Xaa	Ser 5	Thr	Gly	Thr	Phe	Cys 10	Gly	Ile	Asn	Gly	Gly 15	Leu	
Cys Cys	s Ser	Asn 20	Leu	Cys	Leu	Phe	Phe 25	Val	Cys	Leu	Thr	Phe 30	Ser		
<210> <211> <212> <213>	407 287 DNA Conu	s st:	riola	atus											
<220> <221> <222>	CDS (1).	. (23)	1)												
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tcc cto	g agg 1 Arg 35	tcg Ser	act Thr	acc Thr	aaa Lys	gtc Val 40	tcc Ser	aag Lys	tcg Ser	act Thr	agc Ser 45	tgc Cys	atg Met	aaa Lys	144
gcc ggg Ala Gly 50															192
gct tat Ala Ty: 65	ttc Phe	ggc Gly	aaa Lys	ata Ile 70	tgt Cys	att Ile	ggc Gly	tat Tyr	ccc Pro 75	aaa Lys	aac Asn	tgat	ccto	ecc	241
cctacto	gtgc :	tcta	tcctt	tt to	ctgc	ctgat	gto	cttct	cct	ccc	ctc				287
<210><211><211><212><213>	408 77 PRT Conu:	s st:	riola	atus											
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Met Lys	s Leu	Thr	Cys 5	Met	Val	Ile	Val	Ala 10	Val	Leu	Leu	Leu	Thr 15	Thr	
Cys His	s Leu	Ile	Thr	Ala	Asp	Asp	Ser	Arg	Gly	Thr	Gln	Lys	His	Arg	

High ein blite



Ser Leu Arg Ser Thr Thr Lys Val Ser Lys Ser Thr Ser Cys Met Lys 40

Ala Gly Ser Tyr Cys Val Ala Thr Thr Arg Ile Cys Cys Gly Tyr Cys

Ala Tyr Phe Gly Lys Ile Cys Ile Gly Tyr Pro Lys Asn

<210> 409

<211> 35

<211> 35 <212> PRT

<213> Conus striolatus

<220>

<221> SITE

(1)..(35) <222>

<223> Xaa at residues 10, 21, 24 and 32 may be Tyr, 125-I-Tyr, mono-iod o-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 33 may be Pro or hydroxy-Pro

<400> 409

Ser Thr Ser Cys Met Lys Ala Gly Ser Xaa Cys Val Ala Thr Thr Arg

Ile Cys Cys Gly Xaa Cys Ala Xaa Phe Gly Lys Ile Cys Ile Gly Xaa 25

Xaa Lys Asn 35